Housing Science, Vol. 22, No.1, pp.125-136,1998
Published in the United States

# HOUSING CONDITIONS AND ACTIVITIES OF THE MIDDLE-INCOME TURKISH HOUSEHOLD

**Halime Demirkan and Sibel Kutlusoy**
**Department of Interior Architecture and Environmental Design**
**Bilkent University**
**Ankara, Turkey**

## ABSTRACT

The aim of this research is to study kitchen related space and storage requirements of residential units considering women's activity and practice patterns; and define current problems related to the kitchen of social houses in Turkey. It must be recognized that architects and designers have a responsibility to support changing lifestyles. The standards and performance specifications of the kitchen should be formed urgently, in order to improve the housing conditions in Turkey.

## Introduction

The primary facts showing a country's housing conditions are the numbers relating to whether the dwellings are able to satisfy the needs of the families, both in quantity and quality. Current research on housing highlights a growing discordance between users' requirements and housing standards even in western societies (1,2,3,4). The major cause of this discordance is the neglect of the individual differences in dwelling habits by the designers' and planners' (5). The researches conducted in this field are mostly restricted to the evaluation of housing satisfaction as opposed to residential satisfaction (6), although they are closely interrelated (7). Although few are interested in the analysis of house plans and found out that interior spatial layouts had changed significantly over the years (8). It must be realized that the kitchen is one of the most important areas of the home. In one study Kent (9) stated that among West Europeans and North Americans, the use of space in kitchens is consistently restricted to food preparation and related clean-up tasks. Although they are planned for food-related activities, kitchens are units which serve a great variety of functions. The kitchen is the place where the user, often the housewife, spends most of her time even in European and North American kitchens (9), in order to carry out activities ranging from cooking and preparation of food, to taking care of children. As Mack puts it, "although work - and more diverse and complex work is probably carried on in the kitchen than anywhere else in the home, architects and builders often
often relegate this room to postage-stamp size as their first line of attack against space problems" (10.58). Therefore, the planning of the kitchen plays an important role in the design of the house, as it is desired to be a pleasant and comfortable place in which the user can work smoothly with little frustration or annoyance.

0146-6518/98/125-136$2.00/0

Since the kitchen forms the core of a housing unit, its' standards must be kept very high, considering human health and hygiene (11). As a result of the activities carried out within it, the kitchen is also a space where the highest amounts of noise, smell, heat, and vapor are produced. Therefore, its relations with other spaces in the home, the equipment stored in it, and the choice of materials to be used for kitchens and their surrounding spaces need special consideration during their design, production, and use. Also, for the same reasons, kitchens carry special importance from the financial and technological points of view. Because of the use of industrialized production techniques in Turkey, standardized kitchen units are being produced and used. Therefore, the standards and performance specifications for kitchens need to be solved urgently. This leads to allocating insufficient areas to kitchen activities, and to carrying of functions and activities of kitchen to other spaces in the house.

The basic concern of this research is the investigation of practices and facilities in the kitchens of social dwellings, those related to space and storage in particular. Although a kitchen plays an important part in the life of the middle-income household, it has not been taken into serious consideration in the interior planning of social housing in which middle-income citizens live. Since space is very valuable in the small scale houses, further research needs to be done in order to improve kitchen facilities and storage practices of these households.

**Urban Middle - Income Household and women's Role in turkey**

Social, psychological, and behavioral changes not only influence, but are influenced by spatial arrangements (12). It is a well-known fact that Turkish society is undergoing a rapid social change from being a traditional, rural, patriarchal society into an increasingly urbanized, modern egalitarian society. Communication and role sharing between spouses are limited, indicating well-differentiated and non-overlapping sex roles even in urban areas. Woman's work as domestic activities such as food production, housework and child care are underestimated due to social values which assign the provider role to men (13).

Middle-Income Household and Women's Role in Turkey In urban areas the substantial percentage of professional, highly educated, highly skilled woman is notable in view of the low overall female education and skills in the country. As men's and women's lives converge, then their choices of space will not only vary from traditionally accepted arrangements, but, indeed, may also converge (15). The proportion of women, especially married women, who are in the work force has risen steeply through the last generation and the same tendency is seen in higher education. There have been parallel tendencies in the family and community developing in ways which make it easier for married women to work outside the home if they wish to do so. Shopping, housing, and other services are improving, husbands are taking a larger and less patriarchal part in the running of their homes, and the number of large families and births after 30 are falling since views tend to have fewer children. However, role segregation which is still widely seen in the life of middle income Turkish families leads to a strong preference for the housewife at home (16). The household income distribution of Turkey is rather unbalanced as seen in Figure 1, in which the upper 20 percentile shares' 50% of the total household income (14). Since inflation rate is so high in Turkey, the income distribution is not stated in Turkish monetary units, instead only the percentile distributions are given.

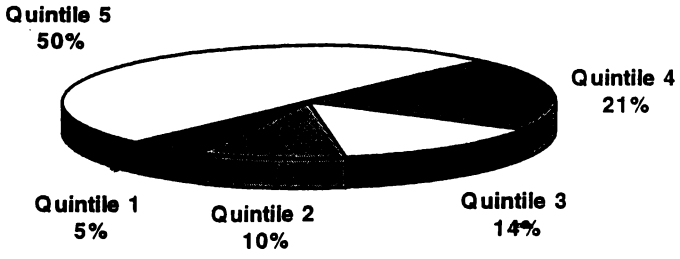


FIG 1: Income distribution by quintiles, 1987

Turkish urban society is undergoing a rapid social change. This involves modifications of social structure as well as modifications in attitudes, beliefs and values. There is a clear status distinction and separation between sexes and generations. The sample used to analyze kitchen related space and storage requirement is believed to reflect the characteristics of the middle-income household in Turkey.

**Methods**

Focused sampling has been chosen as the sampling method of this study (17). Since this study is mostly based on qualitative research, it is focused selectively on the quarters of Izmir which is determined as middle-income parts of the province in official statistics. This research is logically interlinked with the "Household Income and Consumption Expenditures Survey Results, 1987" (18). This study aims to extend and complement a national survey with in-depth interviewing of a selected middle-income group within the national sample. Cases are selected for an intensive study with reference to their kitchen requirements in order to determine the design specifications of the kitchen in social dwellings.

The enumeration sheets of the Population Census (19) were used to divide the quarters into blocks on the basis of definitions of the blocks as provided. Each block is a group of around 50 dwelling units. Each dwelling within the block is chosen randomly. A substitute dwelling was also defined in case of difficulties in identifying the selected dwelling due to changes or not finding the housewife at home, since the study aims to focus on the housewives.

A total of 100 social dwellings was selected and interviewers individually contacted with the housewives, providing information on the survey, asking questions and entering the replies on the questionnaire. The survey is composed of a questionnaire and an observation sheet. The questionnaire has three sections. Section 1 covers questions related to the housewife as age, education level, occupation, place of birth and length of settlement in Izmir. Size of the household and number of children below age 11, average family income and ownership of the residential unit

are also questioned. Section 2 contains questions related to kitchen activities that are conducted in the kitchen or in any other part of the dwelling, as well as to the frequency and amount of shopping. Section 3 includes questions related to kitchen preferences of the housewives. The questions were not seeking open-ended answers. Possible alternative answers were stated which the responses can be merely checked. A pilot test was conducted with individuals who are expected to be similar to the subjects in the sample.

The interviewers have made observations in the kitchen related to the issues stated on the observation sheet. The replies received to the questions asked by the surveyor were attempted to be confirmed during a conversation held within the context of an informal talk at this period.

**Results of the Survey**

Analysis of the Household

The mean age of the 100 housewives covered in the survey is found to be 35. 55°/0 of the housewives stand among 30-40 years of age. Taking 45 years to be middle-age, 85% of the housewives were below middle-age and 15% over middle-age. This is conforming with the age pyramid of Turkey which the population is quite young (14).

Related to education, the highest count is obtained for primary school graduates (58%). The following highest counts were found for high school graduates (15%), secondary school graduates (14%), and university graduates (4%). 9% of the housewives in the sample were illiterate. These values are comparative to the values in 1990 Population Census (14).

Despite the fact that the survey was carried out during weekdays to reach the appropriate sample, of the 100 women questioned, 93% were found to be housewives, while for the remaining 7%, the distribution was for full time professionals (3%), part time professionals (2%), a university student (1%), and a retired teacher (1%). As for the actual middle income Turkish population, a high number of woman are professional workers outside home (20).

For the distribution of household population, it was found that 60% of households were 3 to 4 people, mostly with 1 or 2 children, and parents which is similar to Izmir's urban household size (19). The number of children in the family below 11 years - currently in primary school - were questioned, as those children are considered to be in need of parental guidance in the house. 29% had one child, 22% had two children, and 2% had 3 children below the age of 11.

Since the research is based on the Turkish middle-income household, the average monthly family income distribution is especially important for the understanding of the research results. Of the 100 households, 76% have an income, which is considered to be in the middle income range.

8% of the housewives did not know the average household income, or did not wish to reply to the question. Income distribution of the sample depicts the same characteristics with the income distribution of the Turkish population and 76% which is considered as the middle-income population belongs to second and third quintiles in Figure 1.

Of the 100 households, 46% were living in their own house, 27% in rented apartment units, and

27% in a company lodging. Those living in their own house had the opportunity to make alterations in their kitchen -as far as they could afford it- according to their needs. The remaining 54% had to use their kitchens the way they were, or by inserting small additions for more effective use of the space which is covered by the observation. The ownership percentage was less than Turkish urban ownership which was 60.62% (14), but the percentages of the ones who are having lodgings in the sample were considerably high, due to the growth of industry and establishment of many firms at this region.

In 88% of the households, there was one person who generally worked in the kitchen. This result shows us that 88% of the households had a traditional family type. For the 11% where generally two people worked in the kitchen, it was either the daughter or the mother/mother-in-law who helped the housewife with kitchen chores (again a traditional type of family). In 1% of the households, 3 people generally worked in the kitchen, and in this specific case, the household size was 6.

The meals were generally taken in the kitchen. Those households taking meals in the family room did so because it was warmer there, since there is no central heating system in most of the houses, and stated that they would use the kitchen or the balcony during the summer for having meals.

Another result obtained from the relevant question is that the living room was used for meals only when there were guests. Otherwise, living rooms were seldomly used, for eating as well as for sitting activities. In most of the Turkish houses, living room is the space used for the entertainment of the respected guests, where family room is used daily by the family members.

Also, 95% of households always had their meals in the same place. On the other hand, 4% had breakfast and/or lunch in the kitchen but preferred to have dinner in the family room, since the family was gathered together in the evenings.

TABLE 1 : Side Activities in the Kitchen

| Side Activities | Household % |
|---|---|
| Listening to the Radio | 59 |
| Reading | 46 |
| Taking care of children | 25 |
| No side activities | 22 |
| Watching TV | 6 |
| Laundry, Ironing, Sewing | 0 |

When the side activities in the kitchen (Table 1) are observed, it is found that 22% did not perform any side activities in the kitchen, because they wished to leave the kitchen once they had finished their work there. They wished to be in a more pleasant, comfortable, and warmer environment

once work in the kitchen was over. Another result was that none of the housewives interviewed used the kitchen for the activities of laundry, ironing, or sewing. This may be a result of cultural habits, or simply due to the reason that kitchen areas and capabilities were insufficient.

Only 40% of the housewives stated that they used other parts of the house while preparing meals. 21% favored to use the family room for cleaning vegetables because it was warmer there, or TV could be watched while doing work. 14% of the housewives preferred to prepare pastry in the family room because there was no sufficient floor area in the kitchen to be able to use the pastry board. The pastry board is still widely used and housewives state that it is more comfortable to sit on the floor and prepare pastry on the pastry board. 19% of the housewives used the balcony for drying vegetables and/or fruit.

"Tarhana" is a home made instant soup prepared and consumed widely in west of Turkey, which requires a great deal of space, during the drying process. Most housewives dried their "tarhana" in the living room, since it's a space very seldom used. Drying vegetables and/or fruit was not as common practice as the others,because of the humid weather of Izmir.

Shopping practices of households show a great variety. 31% of the households went shopping once every week - which requires an average amount of food storage area. 28% of the households went shopping once per week, and in addition went shopping once every month requiring relatively more storage area as to the previous group, in order to store the monthly dry food that they keep. 11% went shopping 2-3 times per week - consuming what they buy quicker than the others, therefore requiring less amount of food storage area. 9% of the households, in contrast to the previous case, went shopping 2-3 times per month and therefore needed relatively more food storage space. The following 6% went shopping everyday, requiring less amount of storage space for food. 6% went shopping 2-3 times per week and once per month, and 2% went shopping everyday and once per month, again requiring storage space for the monthly items they buy. Lastly, rest went shopping once per week and 2-3 times per month, requiring more storage area, since they buy and store food for a long period of time.

When asked if they bought large amounts of food and kitchen supplies, 59% answered yes, and 41% answered no - because shopping amounts were directly proportional with the income of the household. The number of those households who bought dry food (flour, sugar, etc.) in large bags was 59%, those who bought food and kitchen related substances (detergents, soap, macaroni, etc.) in boxes was 6%, and those who bought cooking oil in tin containers of 5-10 kg. was 52%.

Observations in the Kitchen

All houses visited were apartment flats, having enclosed kitchen types with single-sided work surfaces. Also, all the kitchens had doors opening into the entrance of the house and the kitchen balcony. The refrigerator, sink and cooker constitute the work triangle of frequently used elements. For reasons of safety, through circulation one should not intersect this triangle and the sum of the lengths of the sides of the triangle should not exceed 7m (21). All the kitchens observed had a door opening to the kitchen balcony where the work triangle can be interrupted by people passing through.

The mean kitchen floor area for the 100 houses visited was 8.52 m square. The highest count of floor area was in the 5 m2 range(25%). 46%of the kitchens fall below 8 m2, which is the required minimum floor area for a kitchen without a dining area (21). 88% fall below 12 m2, which is the required minimum floor area for a kitchen including a dining area.

The mean of the total work surface length for the 100 kitchens is found to be 2.0365 i 0.3686 m. The highest count (31%) is obtained for work surfaces of 2.2 m in length. 47% of the work surfaces were below 2.0 m in length, and 53% was 2.0-3.0 m. The location of the primary work surface between sink and cooker, which is the appropriate place, is seen in 15% of the cases . For the remaining 85%, the sink was placed in the center of the work surface. The basic design principles related to kitchen, which is based on sequence of use should be obeyed. For a right-handed person the sequence of activity proceeds from left to right thus: sink to main working surface to cooker to the work surface for putting things down. It is observed that only 15% of the kitchens had an appropriate main working surface. None of the kitchens had secondary work surfaces.

The mean work surface height for the 100 kitchens is found to be 0.8553 plus or minus 0.02115 m. 78% of the kitchens had work surface heights ranging from 0.85 - 0.88 m. Other work surfaces are stated in Table 2.

TABLE 2 : Work Surfaces beside Main Appliances

| | Work surface % | | |
|---|---|---|---|
| Appliances | Refrigerator | Cooker | Sink |
| None | 52 | 1 | 0 |
| On one side | 48 | 99 | 15 |
| On both sides | 0 | 0 | 85 |

The mean measurement for the total length of shelves in kitchens is found to be 9.492 I 3.581 m. The heights count (30%) was obtained for 10 m, and the second highest count (19%) is obtained for 4 m

**Statistical Analysis of the Survey Data**

In this section, a further analysis of the survey data takes place, correlating kitchen practices and/or activities with age and education of housewives, income of households, the amount of time housewives spent in the kitchen, the side activities performed in the kitchen, and the current kitchen floor area. The One Way Analysis of Variance (ANOVA) method is used for the survey data.

The results of the analysis have shown that there is no significant effect of age, on the type of traditional practice housewives perform. In fact, there is a significant effect of age. at 95% confidence interval level, on the number of traditional practices housewives perform. Further analysis shows that the number of traditional practices performed is directly proportional with the age of housewives, i.e. as housewives become older, the number of activities increases. Therefore, it may be concluded that regardless of age, middle-income Turkish housewives are continuing to carry on traditional practices with varying degrees, and kitchen designs must take into account the spatial and storage requirements related to these activities.
The kitchen preferences of housewives were choices independent of their age. Preference results obtained were generally due to current kitchen floor area and related kitchen facilities.

TABLE 3: Housewife's Preference for Kitchen Area Related to the Current Area

| | Preference for Kitchen | | |
|---|---|---|---|
| | Same as current kitchen | Larger kitchen | |
| Kitchen area (x) | | | |
| X<8m square | 15.64% | 30.36% | n=46 |
| 8<x m square | 18.36% | 35.64% | n=54 |
| | n=34 | n=66 | |

Table 3 shows the preference of the housewives when kitchens are grouped according to their sizes as below 8 m square and 8 m square and above. 34% indicated that they would prefer to have similar kitchen if they moved to another house. The rest of the sample stated that they wished to have a larger kitchen. The current size of the kitchen had a significant impact on their wish of having a larger kitchen (X square (1, N=100) =38.451; p< .000).

Regardless of their level of education, housewives perform side activities in the kitchen. The spatial requirements of these activities must be analyzed, in order to produce satisfactory kitchen designs. Also, there is no significant effect of education, on the kitchen preference of housewives.

ANOVA was performed in order to find out whether household income affected the plan preference of housewives. The results of the analysis have shown that there is no significant effect of the average monthly income of the household, on the kitchen-living room combination plan preference of housewives.

It was discovered that there is no significant effect of the amount of time housewives spent in the kitchen, on the kitchen preferences of housewives, nor their kitchen-living room combination plan

Preference. Also, The results of the analysis have shown that there is no significant effect of side activities performed in the kitchen, on the amount of time housewives spent in the kitchen.

Housewives were asked to choose one of the kitchen - living room combination plans in the figure 2. In these plans, the housewife was to make her choice, considering that as the kitchen was becoming larger , the living room was decreasing size.

For the most preferred three kitchens, Plan D, Plan C, and Plan B, the percentages are very close - 34%, 31% and 30% respectively. The most favored plan type was Plan D, where a "living kitchen" was situated beside a small living room. Housewives preferred to use the kitchen like living room, where they could work, eat, sit, watch TV, and dine their guests. The following 31% stated that they would wish to have the eating activity, in the kitchen, but would not prefer to sit there. The 30% who chose plan B wished to have eating facilities in the kitchen, but also in the living room, because it would not be proper to dine guests in the kitchen. 4% preferred the open-plan type kitchen, and 1 housewife preferred plan type A because she wished to leave the kitchen as soon as her work there was over, and wished to carry out other activities in the living room or the family room.

TABLE 4 : Kitchen Plan Preference of The housewives Related to their current kitchen areas

| | | Kitchen plan preference | | | | | |
|---|---|---|---|---|---|---|---|
| | | A | B | C | D | E | |
| Kitchen Area(x) | X<8 m square | 1 | 15 | 14 | 15 | 1 | n=6 |
| | 8<x<12 m square | | 14 | 15 | 11 | 2 | n=42 |
| | 12<x m square | | 1 | 2 | 8 | 1 | n=12 |
| | | n=1 | n=30 | n=31 | n=34 | n=4 | |

The preference of the housewives related to the plan types are stated according to their current kitchen areas. The current kitchens are classified into three categories. The kitchens which were less than 8 m square were considered to be inadequate. A kitchen with an area above 8 m square were considered to be adequate for a 4 person household and a dining kitchen should have a minimum 12 m square (21).

In fact, there is a significant impact of current kitchen floor area, on the kitchen preference of housewives. The kitchen preferences of housewives were compared with their current kitchen size. The current kitchen size had a significant impact on the plan preference of the housewives (%2 (8, N=100)= 9.966; p .10) (see Table 4).

**Discussion And Conclusions**

The middle-income housewife, being the major user of the kitchen, has been facing numerous problems in her kitchen. Many of these problems tend to arise from the inadequacy of space and storage facilities of kitchens. The main reason for this inadequacy is that houses are being built without any research on the actual needs and kitchen practices of people who live in them.

The research about the utilization of the kitchens showed that in the great majority of Turkish households, the kitchen is used for meals and for activities such as listening g to the radio, and reading

newspapers/books and the housewives highly desired to watch TV in the kitchen. Laundry, ironing or sewing were not performed in the middle-income kitchen.

There are certain traditional activities such as preparing vegetable preserves, jam or marmalade, instant soup (tarhana), drying vegetables, and pastry over the pastry board. However, because of inefficient kitchen floor area, these activities were carried to the family room. Designers must therefore ensure that future kitchen areas are suitable for these various uses, and provide adequate space for them. Nowadays, kitchens in social dwellings commonly have a gross area of 8 m square. The more extensive the use of the kitchen, the bigger is the kitchen area that must be provided.

According to the observations in the study, the kitchens are enclosed kitchen types with single sided work surfaces. It was found out that the meals were taken generally in the kitchen, and less frequently in the family room, even during the winter, and the number was increased in the summer time. 34% of the housewives made a preference for a "living kitchen", where they could work, eat, sit, watch TV, and dine their guests.

The kitchen with everything along one wall is usually too long, and is suitable only for one or two roomed dwellings (21). In L-shaped kitchen the free corner is often turned into a dining alcove. This shape of kitchen is more appropriate for the habits of the Turkish middle-income households.

Shopping practices of Turkish households were variable, but it was discovered that kitchens require storage space for the monthly bought items. The households bought dry food as flour, sugar in large bags; food and kitchen related substances as macaroni, soap, detergents in boxes; and cooking oil in tin containers of 5-10 kg. The storage area for these items should be considered in design phase of the kitchen.

Serious research needs to be carried out on kitchen practices and activities of Turkish household, in order to be able to design kitchens satisfying the needs of users. While domestic research abroad goes for back as the 40's, it is almost non-existing in Turkey. Designers and constructors of middle-income dwellings must realize the importance of domestic as well as ergonomic research in this field.

**References**

1 Kaplan, R., "Nature at the Doorstep: Residential Satisfaction and the Nearby Environmental", Journal of Architecture and Planning Research, 2(2), pp.ll5-127 (1985).

2. Michelson, W., "Longitudinal Study of Changing Aspirations by Introduction the Dimension of Time", Social issues, 36(3), pp.l35-149, (1980).

3. Rapoport, A, "Thinking about Home Environment: A Conceptual Framework", In I.Altman and C. Werner (Eds), Home environments, pp.255-286, Plenum, New York, (1985).

4 Tognoli, J, "Residential Environments", In D. Stokols and I. Altman (Eds), Handbook of Environmental Psychology, pp.55-690, Wiley, New York, (1987).

5. Giuliani, M.V., Rullo, G., and Bove, G., "Socializing and Privacy Space Inside Homes: An Empirical Study", Culture, Space, History, 3, pp.129-138, (1990).

6. Rent,G.S., and Rent, C.S., "Low-Income Housing: Factors Related to Residential Satisfaction", Environment and Behavior, 10(4), pp.459-485, (1978).

7. Kaitilla, S., " Satisfaction with Public Housing in Papua New Guinea: The Case of West Taraka Housing Scheme', Environment and Behavior, 25(4), pp.514- 545, (1993).

8. Hasell, M.J., and Peatros, F., "Exploring Connections Between Women's Changing Roles and House Form", Environments and Behavior, 22(1), pp.3-26, (1990).

9. Kent, S., "Analyzing Activity Areas: An Ethnoarchaeological Study of the Use of Space", University of New Mexico Press, Albuquerque, (1984).

10. Mack, L., "Living in Small Spaces", Conran Octopus Limited, London, (1989).

11. Cook, C., "Components of Neighborhood Satisfaction: Responses from Urban and Suburban Single Parent Women", Environment and Behavior, 20, pp.115-149, (1988).

12. Anthony,K., Weidemann, C., and Chin, Y., "Hosing Perceptions of Low-Income Single Parents",Environment and Behavior, 22(2), pp. l47-179, (1990).

13. Kandiyoti, D.,"Urban Change and Women's Roles In Turkey: An Overview and Evaluation', In C. Kagitcibasi (Ed), Sex Roles, Family and Community in Turkey. pp.102-109, Indiana University Press, Indiana, (1982).

14. SIS, "Statistical Yearbook of Turkey 1993", State Institute of Statistics, Ankara, (1993).

15. Hasell,M.J., Peatros, F.D., and Bono, C.A., "Gender Choice and Domestic Space: Preferences for Kitchens in Married Households ', Journal of Architectural Planning Research, 10(1), pp. 1-21. (1993).

16. Celen, G., "The Kitchen of the Turkish Working Woman", Unpublished Master's thesis. Middle East Technical University. Ankara. (1980).

17. Hakim, C., "Research Design; Strategies and Choices in the Design of Social Research',Routledge, London, (1992).

18. SIS (State Institute of Statistics) "Household Income And Consumption Expenditures Survey Results', State Institute of Statistics, Ankara, (1987).

19. SIS, "Census of Population. Social and Economic Characteristics of Population. Province-Izmir", State Institute of Statistics, Ankara, (1990 b).

20. SIS, "Household Labor Force Survey Results", State Institute of Statistics, Ankara, (1990a).

21. Grandjean, E.,"Ergonomics of the Home", Taylor and Francis Ltd., London, (1973).